20

23

appropriate computers. Computing device 2050 is intended to represent various forms of mobile devices, such as personal digital assistants, cellular telephones, smart phones, and other similar computing devices. The components shown here, their connections and relationships, and their 5 functions, are meant to be exemplary only, and are not meant to limit implementations of the inventions described and/or claimed in this document.

A number of embodiments have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the specification.

In addition, the logic flows depicted in the figures do not require the particular order shown, or sequential order, to achieve desirable results. In addition, other steps may be 15 provided, or steps may be eliminated, from the described flows, and other components may be added to, or removed from, the described systems. Accordingly, other embodiments are within the scope of the following claims.

What is claimed is:

- 1. A motorized shoe assembly, comprising:
- a platform;
- a flex region provided on a bottom surface portion of the platform, between a first portion of the platform and a 25 linkage assembly also includes: second portion of the platform, the platform being configured to flex at the flex region through a range of flexure, between a neutral state and a fully flexed state;
- a locomotion device coupled to the bottom surface portion of the platform, including:
 - a plurality of wheels; and
 - at least one belt coupled to the plurality of wheels, the plurality of wheels configured to guide movement of the at least one belt;
- a motor coupled to the platform and selectively providing 35 power to the locomotion device to selectively operate the locomotion device; and
- a linkage assembly coupled to the bottom surface portion of the platform, and coupled to the locomotion device, wherein the linkage assembly includes a linkage arm 40 extending between the first and second portions of the platform, wherein the linkage arm is rotatable relative to the platform so as to maintain a target amount of tension on the at least one belt through the range of flexure of the platform.
- 2. The motorized shoe assembly of claim 1, wherein the locomotion device includes:
 - a first plurality of wheels arranged along a first lateral side of the linkage assembly on the bottom surface portion of the platform;
 - a first belt coupled to the first plurality of wheels, wherein the first plurality of wheels guide movement of the first
 - a second plurality of wheels arranged along a second lateral side of the linkage assembly, opposite the first 55 lateral side thereof, on the bottom surface portion of the platform; and
 - a second belt coupled to the second plurality of wheels, wherein the second plurality of wheels guide movement of the second belt.
- 3. The motorized shoe assembly of claim 2, wherein the motor is configured to:
 - supply power to a first wheel of the first plurality of wheels to rotate the first wheel of the first plurality of
 - move the first belt coupled to the first plurality of wheels in response to the rotation of the first wheel of the first

24

plurality of wheels, the movement of the first belt being guided by the first plurality of wheels;

- simultaneously supply power from the motor to a first wheel of the second plurality of wheels to rotate the first wheel of the second plurality of wheels; and
- simultaneously move the second belt coupled to the second plurality of wheels in response to the rotation of the first wheel of the second plurality of wheels, the movement of the second belt being guided by the second plurality of wheels.
- 4. The motorized shoe assembly of claim 1, wherein the linkage assembly includes:
 - a first stationary block coupled to the bottom surface portion of the platform;
 - a second stationary block coupled to the bottom surface portion of the platform;
 - a first movable block movably coupled to the second stationary block;
 - a second movable block movably coupled to the second stationary block; and
 - a linkage arm having a first end thereof rotatably coupled to the first stationary block and a second end thereof rotatably coupled to the first movable block.
- 5. The motorized shoe assembly of claim 4, wherein the
- a first guide rod having a first end portion thereof fixed to the second stationary block and a second end portion thereof extending through the first movable block and into the second movable block;
- a second guide rod having a first end portion thereof fixed to the second stationary block and a second end portion thereof extending through the first movable block and into the second movable block;
- a first tension spring positioned on the first guide rod, between the first movable block and the second movable block: and
- a second tension spring positioned on the second guide rod, between the first movable block and the second movable block.
- 6. The motorized shoe assembly of claim 5, wherein the first movable block and the second movable block are configured to move in a first direction along the first and second guide rods in response to a movement of the platform from the neutral state to a flexed state, and to move in a 45 second direction, opposite the first direction, along the first and second guide rods in response to a movement of the platform from the flexed state toward the neutral state.
 - 7. The motorized shoe assembly of claim 6, wherein the first tension spring and the second tension spring are configured to remain in tension as the platform moves through the range of flexure.
 - 8. The motorized shoe assembly of claim 1, further comprising a processing device operably coupling the motorized shoe assembly with an external computing device, the processing device including a tracking device that is trackable by the external computing device for tracking a physical position of the motorized shoe assembly.
- 9. The motorized shoe assembly of claim 8, wherein, in response to a detection of movement of the motorized shoe 60 assembly in a first direction and a detection that a physical distance between the motorized shoe assembly and a physical boundary of a physical operational zone defined a physical environment is less than or equal to a threshold distance, the processing device is configured to:
 - supply power from the motor to operate the locomotion device, to move the motorized shoe assembly in a second physical direction that is different from the first